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## ANALOG-TO-DIGITAL CONVERTER

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### Background

The invention relates to an analog-to-digital converter.

An analog-to-digital converter (ADC) is an electronic circuit or an electronic chip which converts an analog signal into a digital equivalent. An ADC converts a continuous-value voltage value into a binary number which indicates how often a particular voltage range is included within the voltage value.

Analog-to-digital converters (ADCs) are used at interfaces between analog signals and digital data processing. Fundamental service features of an ADC are the achievable resolution of the converter (measured in bits) and the conversion speed (measured in samples per second: Sa/s). Particularly in the field of communications engineering, there is a need for very fast converters, that is, converters with high conversion rates (for example, >1 GSa/s). The resolution of known converters is normally between 5 bits and 8 bits, and the circuit architecture is based on a flash converter architecture.

Figure 1 illustrates an analog-to-digital converter 100 which is known from the prior art.

The analog-to-digital converter 100 has a multiplicity of comparators 101 that each have a first input 102, a second input 103 and an output 104. Provided at the first input 102 of each comparator is a signal 108  $V_{in}$  for digitization in the form of an electrical voltage signal. Connected between a respective second input 103 on a comparator 101 and a positive reference potential 106  $V_{ref+}$  or a negative reference potential  $V_{ref-}$  are a number of nonreactive resistors 105 which are characteristic of each of the comparators. By way of example, a single resistor 105 is connected between the second input 103 of the top comparator 101 in Figure 1 and the positive reference potential 106, two

**Preliminary Amendment**

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Title: ANALOG-TO-DIGITAL CONVERTER (As Amended)

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**IN THE SPECIFICATION**

Please insert the following paragraph beginning at page 1, line 5, of the substitute specification with the following paragraph:

**Cross Reference to Related Application**

This Utility Patent Application claims the benefit of the filing date of German Application No. DE 102 55 915.5, filed November 29, 2002, and International Application No. PCT/DE03/003606, filed October 29, 2003, both of which are herein incorporated by reference.

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